

REMARKS

The allowance of claims 1-19 is noted with appreciation.

Allowed claim 14 has been amended to correct a typographical error.

The Examiner has rejected claims 20 and 21 under 35 U.S.C. 103(a) as being unpatentable over Wyles et al. (US 5,043,820, cited by the applicants) in view of the newly cited Shinosky (US 4,065,644). This rejection is respectfully disagreed with, and is traversed below.

Wyles et al. disclose a readout circuit for use with a focal plane array (FPA). The readout circuit employs a single transistor in each unit cell and a single capacitive feedback transimpedance amplifier (CTIA) to process the outputs of each column of FPA detector elements. As was admitted by the Examiner, Wyles et al. do not disclose that the readout occurs in a TDM manner.

The Examiner has then used Shinosky for showing that "when multiple data streams, i.e. information from many different detector elements in a single signal needs to be processed or read out, it is well known in the art to use a TDM method." The Examiner then states that one skilled in the art would be motivated to use such a method to quickly process large amounts of information by separating signals into many segments having very short duration and reassembling the signals at the receiving end.

It is pointed out that Shinosky discloses a telephone network switching system having a cathode ray tube (CRT) that is driven to display spots of light, in combination with a lens and an array of photosensors. The light signals are modulated by the CRT, are then collimated, focused and directed to a specific photosensor by controlling the position of the CRT electron beam. The basic system is augmented so that by using TDM a number of signals can be transmitted simultaneously. In a composite system a plurality of CRTs are used with a single photosensor array.

In the TDM approach of Shinosky "the electron-beam is time-shared among a number of photosensors, sending to each a burst of light resulting from a short duration time sample of an individual signal". Consequently, each photosensor that was receiving a signal would receive that signal as a series of pulses that are amplified and filtered to re-construct the original continuous waveform (see generally col. 12, line 32, to col. 13, line 8) .

In the TDM approach of Shinosky, and in the first part of the process, a group of individual signal flow paths are scanned on a repetitive basis, so that a short duration time sample is taken of the amplitude of each signal. These individual pulse samples are placed on a common signal flow path so that the resultant signal traveling on this path consists of a series of pulses that are interleaved samples of the individual signals. This transformation of a group of separate signals into a train of pulses on a single signal flow path essentially constitutes the multiplexing process.

In the TDM approach of Shinosky a time frame or time base is the time it takes to scan all the signals in the group, a time slot is the particular position occupied by a given pulse sample in the recurrent sampling processes, and the TDM approach is actually referred to as Pulse Amplitude Modulation Time Division Multiplexing (PAM TDM).

Based on the foregoing characterization of Shinosky, it should be apparent that this patent does not disclose subject matter that one skilled in the art would look to, having knowledge of the FPA readout circuit of Wyles et al., in an attempt to design a TDM type of readout circuit. This is true at least for the reason that Shinosky is concerned with time division multiplexing a plurality of subscriber telephone calls together (e.g., see Fig. 4) using a PAM TDM technique, and furthermore employs a CRT or some other type of light emitter or a light deflector (see col. 11, line 38, to col. 12, line 5) to perform the TDM. As was noted above, in the PAM TDM approach of Shinosky it is "the electron-beam" that is "time-shared among a number of photosensors".

Furthermore, how the proposed combination of the readout circuit of Wyles et al. and the CRT-based PAM TDM technique of Shinosky would be accomplished is not hinted at by the Examiner.

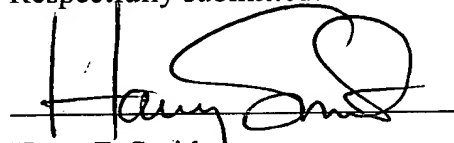
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In any event, a merely clarifying amendment has been made to independent claims 20 and 21, which should also serve to even further distinguish this invention from the Examiner's proposed combination of Wyles et al. and Shinosky, which combination is not herewith admitted is suggested by a reading of these two references, or is in any way technically feasible.

More specifically, claims 20 and 21 both now recite that the circuitry or method operates: "during a predetermined period, to read out an electrical signal generated in response to incident radiation in a first spectral band, and to then read out an electrical signal generated in response to incident radiation in a second spectral band." These claims are thus even more clearly distinguished over the proposed combination of Wyles et al. and Shinosky, as neither is seen to disclose, as examples, the use of multi-spectral radiation detectors, or the readout, in a TDM manner, of electrical signals generated by incident multi-spectral radiation.

A favorable reconsideration that results in the allowance of all of the pending claims is earnestly solicited.

Respectfully submitted:


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